

AMENDMENTS TO THE DRAWINGS:

The attached sheet of drawings includes changes to Figure 4. This sheet, which includes Figure 4, replaces the original sheet including Figure 4.

Figure 4 has been amended to add element 460 within element 400.

Attachment: Replacement Sheet

REMARKS

The application has been amended and is believed to be in condition for allowance.

The independent claims have been amended as discussed below. Claims 2 and 25 have been canceled.

The Official Action objected to the drawings.

Drawing Figure 4 has been amended to add "means 460" within element 400.

The specification has been amended to refer to element 140f of Figure 3.

In view of these amendments, withdrawal of the drawing objection is solicited.

The Official Action objected to the specification due to a typing informality on page 2. The specification has been responsively amended.

The specification has also been amended to add section headings.

Claims 1, 24, 29, and 30 stand rejected as obvious over HALL (Hall, Eric; Internet Core Protocols:...) in view of WONG (Wong, Clinton; HTTP Pocket Reference).

Claims 8, 13-16, 21 and 23 stand rejected as obvious over HALL and WONG in further view of KENNEDY (Kennedy, Hill; Musciano, Chuck; HTML & XHTML: ...).

Claim 10 is rejected as obvious over HALL and WONG in view of HAUSWIRTH (A component...).

Claims 17-19 are rejected as obvious over HALL and WONG in view of ECKSTEIN (XML Pocket Reference).

The remaining claims appear to be rejected as obvious over teachings of HALL.

No claims are indicated to be directed to allowable subject matter.

According to the Official action, independent claims 1, 24 and 29 would be rendered obvious by HALL and WONG.

HALL describes the Transmission Control Protocol (TCP), which is a well known transmission protocol offering reliable communication and flow control in a data network.

When comparing carefully the present invention (independent claims) and the teaching of HALL, one can see, that the data transfer according to the present invention differs clearly from the teachings of HALL. Especially it should be noted that data transfer according to the present invention occurs over the TCP prprotocol, relying on the TCP to provide a reliable connection. To clarify the independent claims applicant addresses claim 1 step by step.

1st Step

a) *"Method for transferring data to a client using a certain packet data connection, said method comprising the steps*

of: receiving a request, which is according to a certain data transfer protocol and specifies a certain information entity"

Although it seems that the general procedure is also disclosed by HALL, it should be noted that according to the present invention only one request is sent from the client to the server and after this one request the client is not required to make other request, or acknowledgements, etc., but the server makes a long response to the client's one request. The response is both long in size and long in time and grows towards infinity, and the response consists of numbers of parts, unless the connection between the client and server is terminated. The prior art does not teach or suggest such an approach. Thus, independent claims 1 and 24 have been amended to emphasize the plural part response is responsive to only one request.

2nd Step.

b) *"sending, using said packet data connection, at a first time instant to said client a first portion or a response according to said data transfer protocol, said client after receipt of said first portion being arranged to accept further at least a further response".*

Although HALL teaches the HTTP server acknowledging the request from the HTTP client and the HTTP client acknowledging the server's acknowledgement, this is only a normal handshake

process used in TCP protocol, and naturally after the handshake process both systems are able to exchange data as needed.

Now it should be noted that according to the present invention all header etc., information is passed only in said first portion of the response to the client (see for example page 11, lines 5-12). Of course it is clear that TCP/IP packets include TCP-headers, because according to the TCP protocol each of packets include TCP-header. In the present invention only the first portion of the response includes header information for the response type for example, and subsequent second portions of the response include only information fragments of the requested information, not any header information or acknowledgements anymore. Thus independent claims 1 and 24 have been amended to recite this further distinguishing feature.

b) "sending, using said packet data connection, at a first time instant to said client a first portion of a response according to said data transfer protocol, said first portion comprising all header information of the whole response and a body of a web page showing a certain information entity, and said client after receipt of said first portion being arranged to accept further at least a further part of response, and"

3rd Step

c) "sending, using said packet data connection, at sequential second time instants to said client a plurality of

second portions of a response, each of said second portions comprising an information fragment of said information entity and computer language instructions for processing said information fragment"

Although HALL teaches bundling portions of data into segments and sending segments to the client, the segments all have header information. The process that HALL teaches is a typical data transfer process according to the well known TCP prprotocol.

However, according to the present invention each of said second portions of a response comprises only an information fragment of updated information entity, so the one second portion of a response is advantageously sent when the content, or at least part of the content of information entity, is updated. None of the second portions of the response comprise header information, but header information has already been delivered with the first portion of the response (b-part of the claim 1).

It should be noted, that header information in the present invention does not mean header information according to the TCP protocol. Also it should be noted that even if claim 1 states "second portion of a response" meaning one portion, the present invention does not say anything about TCP protocol, which still can split said one portion to number of pieces and again bundle the pieces into segments just like the TCP protocol does.

The data transfer according to the present invention occurs over the TCP protocol layer, and of course TCP-protocol handles data traffic—as well as also data packets created according to the method of the present invention—in its layer like it normally does. Moreover, computer language instructions for processing said information fragment does not mean header information as in TCP protocol, but the computer language instruction of the invention is rather a script (list of commands) to process said updated information fragment of the second portions of the response, in other words instruction of which part of the web page is updated or which part of the web page the updated information fragment belongs to, for example (see for example page 5, lines 7-17). Thus the amendments clarify this.

c) *"sending, using said packet connection, at sequential second time instants to said client a plurality of second portions of a response, each of said second portions comprising only an information fragment of updated part of said information entity and script for processing said information fragment of updated part of said information entity."*

Furthermore, in order to make clearer differences between the prior art (Hall & Wong) and the present invention, claim 1 has been amended by adding features of claim 2 to it. HALL seems to teach an acknowledgement timer (also known as a retransmission timer) in order to detect when a sent segment has

been lost in transit. HALL also teaches an incremental fall-back timer, by which the server will probe the client (based on acknowledgement sent by the client to the server) and thus adjust the timing of delivery of the packets to be sent so that they are sent at most advantageous moment. According to the present invention the time period between two sequential response portions is advantageously limited to a certain maximum value, because in some cases a network component (such as client or even server or http proxyserver etc.) may determine to close a packet data connection or may determine that there is no further data to be received, if no data is transmitted for a certain period of time.

These differences between the present invention and the prior art are believed to be patentably distinctive. Accordingly, reconsideration and allowance of all the pending claims are respectfully requested.

Note that claim 4 has been amended consistent with the above remarks.

Summary

The present invention relates to continuous HTTP connections delivering real-time information with a long response to the client's one request. In traditional HTTP connection, if the client needs an update for current information, a new request

is required each time. Requests are always triggered from the client side and responses are always answers to these requests. If a response is a long file, it may be divided into smaller packets.

In the continuous HTTP connection according to the present invention the server makes a long response to the client's one request. The response consists of multiple parts, but to the client it still appears as one long response similar to a normal HTTP response. From the HTTP protocol's point of view the response is an equal of a long slowly-transferred document, when in fact, the response consists of multiple update parts created in real-time.

The first part of the response includes HTTP headers and possibly also the body of a web page. The web page is a complete page for presentation of the information to the user. The following second parts of the response include updated information, but no header information. Every time the server has new updated information, it sends the new update part of the response to the client. Because this update information is included as a small script, the information can be updated into the presentation part of the web page.

These novel and non-obvious features of the present invention have been incorporated into the independent claims. Applicants believe that the present recitations patentably


distinguish the present claims over the prior art. However, should there remain any questions concerning the sufficiency of these recitations to patentably recite the present invention, any suggestions by the Examiner would be greatly appreciated. Further, if such amendments are necessary, it would be appreciated if the Examiner would contact the undersigned attorney so that such amendments could be discussed prior to any further Official Action.

Applicants believe that the present application is in condition for allowance and an early indication of the same is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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REL/mjr
June 27, 2005

APPENDIX:

The Appendix includes the following item(s):

- a Replacement Sheet for Figure 4 of the drawings